Water System ID	WV3300608
Water System Name	WVAWC - Huntington Dist
Contact Name	Ex. 4 - CBI
Contact Phone	
Contact Email	
Source	
Separate Sample location representing GW/SW sources	Surface water ONLY. Dedicated tap for raw surface water and brings it into the lab - before chemical addition. Two intakes, one intake (Gyandotte) upstream is not used unless there is an emergency. The intakes are approximately 4 to 5 miles apart.
Treatment type (In order)	
Air Stripper	
Chemical Addition	Mixing tank - chemical feed: ferric chloride polymer blend AS2820 (25 - 40 ppm, 10-12% ferric, 12lbs chemical per MG) and sulfuric acid. NO chlorine addition at this point.
Coagulation & Flocculation	2 stage flocculation with 2 settling tanks in parallel.
Sedimentation	Sedimentation basins (2) with plate settlers, wiers collect water prior to settling, rectangular basins. After wiers treat it with caustic soda to increase pH, small amount of pre-chlorine prior to filters (dosage ~1.0 ppm). Chemicals added to effluent from basins.
Filtration	Total of 12 filters containing GAC - one basin set up to feed ~1/2 filters, therefore 6 filters per basin. Effluents combine first and then go to clearwell - 6 filter effluents combine & 6 other filter effluents combine for 2 separate lines to the clearwell. Sample Location 2: Tenetively after filters, there are sample taps. Chemicals added before clearwell. At clearwell, add chlorine and caustic - both go right into clearwell. Caustic dose [50% summer, 25% winter], 83 lbs per MG now, approx 10 ppm; feed lines are not protected from the cold weather, that is why they change caustic concentration. Dosage probably about the same
Advanced treatment - UV Disinfection System	None.
Orthophosphate	Corrosion inhibitor - zinc orthophosphate (halfway through clearwell) need dosage.
Fluoridation	Flouride is added about 1/2 way through the clearwell - need dosage.
Gaseous chlorine post	Gaseous chlorine dosage 3 ppm at the clearwell. Chlorine Dose (Pre) Gas 6 min chlorine CT prior to filters pH6.8 up to 7.0 for Manganese oxidation dosage approx 0.5 to 1.0 ppm now. No storage tanks after clearwell - goes directly to distribution system.
capital plan improvements for DBP reduction (over the next two years): At the Treatment Plant	Trying to purchase a grit remove system, to remove sand from raw water. Depending on Stage 2 OEL Report (started in November 2012), may want to make improvements although plant already designed for TTHM reduction. No chloramine intended at this plant. Plant making improvements to decrease TTHMs, but bromide is causing issues.
capital plan improvements for DBP reduction (over the next two years): In the Distribution System	No capital improvements planned. Aeration installed in one tank in Sept./October 2012, prior to THM sampling in November 2012, possibly made difference in THM results. - 12' main with 1/2 MG tank.

Need sulfuric concentration and dose

Analytical equipment			
Chlorine instrument type	Continuous	Spectophotometer/Bench	Handheld
Instrument Location	1) effluent of mixing tanks; 2) effluent of both sedimentation basins; 3) influent of clearwell, samples from clearwell; 4) at mid-point of clearwell; 5) 2 on effluent from clearwell; and 6) 8 in the distribution system (including MRT location).	Yes	Other locations within distribution system use LaMotte handheld. Water age in distribution system MRT ~10 days
Make	HACH	LaMotte (Planning on changing to Hach)	LaMotte
Model	CL17		
Calibration frequency	Chlorine standards checked every 6 months, Calib checks on effluent CL analyzer every 2 hours against LaMotte benchtop.	Quarterly calibration and standards checked daily	
Frequency of chlorine measurement recorded for each location	Continuous	Every two hours Effluent	
Frequency of chlorine dosage recorded for each dosing location	At 1st CL17, take weight and dosage every 2 hours, on SCADA.		
Analytical method used	Use HACH method.		
Analytical equipment range	Range: 0-5 ppm in line.		Range: 0-3 ppm on handheld.
Alkalinity - what kind of samples?	Raw, treated, settled, and finished water samples.		
Alkalinity sampling frequency	Once every 8 hours.		
Indicator	Isopropyl methyl, sodium thiosulfate		
Acid standard	20 N sulfuric acid		
Sample size	100 mL		
Conversion factor/multiplier?	10		
pH equipment (Make/Model)	Orion		
pH handheld or fixed	benchtop (also have in-line pH meter)		
Calibration frequency	Calibrated every 8 hours.		
Which buffers used for calibration	3 point calibration, 7, 10, 4 - record slope.		
Conductivity measurement on site? Kind of samples	Yes, Intake water and for Orsanco samples		
Conductivity instrumentation make model			
Calibration	Calibration every week for ORSANCO samples. One shot standard		
Type of filtration equipment on site	Yes, have filtration equipment, use for UV254		
Make & pore size	Various		
Sampling locations:			
Location 1 equipment method	Sample tap, intake comes into lab. Located before chemical addition		
Location 2 equipment method	1/24/13 Need to discuss with superintendent about effluent from filters, Think do have IFE sample location available at turbidimeters. (Typical CFE location is sample point after post Cl and caustic addition) 2/5/2013 CFE location available		
Location 3 equipment method	Effluent of clearwell, has a sample tap in lab.		
Location 4 equipment method	1/24/13 MRT location would receive aerated tank water. Can pick location not aerated: High THM 4 or THM 5 - need to find out water age		

Sampling schedule	
Thru time from EP plant to EPTDS	Intake to after filters = ~1.5 - 2.0 hours.
Water age from EPTDS to highest stage 2 site	Depending on MRT location - THM 4/5. 2/8/13 Water age from EPTDS to Stage 2 location 50.3 hours not 53 hours for High THM 4
Stage 2 transition start date	4th quarter 2012
Stage 2 MRT months and day of week	2/5/8/11, second full week Tuesdays
Plant sampling day of week	Tuesdays
Highest stage 2 location	THM 4/5
Booster chlorination prior to high TTHM location	No booster chlorination.
Analytical	
Analytical laboratory contracting with	Belleville Lab
Collecting any parameters more frequently than our study if yes which	Bromide data due to Orsanco study
Workshop/Webinar capability	
Personnel involved with this effort	Ex. 4 - CBI
External approval of involvement/travel	
Internet capability	yes
Ability to travel to workshop	
Ability to bring chlorine equipment to workshop	
Who would be collecting samples?	Ex. 4 - CBI
Involvement in other research projects (for what and frequency)	Orsanco
Address for sending bottle coolers	24th St & Ohio River
	Huntington, WV 25703
Refrigerator	Yes
Confidentiality - Publish Name in research report	Yes
Daily Operation	24/7 Operation
Sampling staff on Weekends	If necessary.